DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-003307
Date Inspected: 24-Jul-2008

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 630
OSM Departure Time: 1530
Location: Shanghai, China

CWI Name:	Zhashi and Ye Yong Jun			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: OBG and SAS Tower Fabrication

Summary of Items Observed:

On this date, Caltrans Office of Structural Material (OSM) Quality Assurance (QA) Inspector Joselito Lizardo was present as requested to perform observations on the fabrication of Orthotropic Box Girder (OBG) and SAS Tower at Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China.

The QA Inspector has randomly observed the following activities on sub-assembly Bays mentioned below;

Bay 4: Tower Diaphragm
This QA Inspector randomly observed ZPMC welder ID #066673 utilizing the FCAW Process in the 3G (Vertical Groove) Position with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic with ZPMC WPS WPS-B-T-2233-B-U3-F, to weld fill passes on groove (bent heavy plate) splice butt joint on Tower Diaphragm Flange Sub-Assembly NSD1-SA27 A/B weld joint 6B. The QA Inspector randomly observed ZPMC CWI Ye Yong Jun monitoring preheat and weld parameters.

This QA observed continuation of tack welding/fit-up of PJP connection between 40mm thick double diaphragm stiffener/connector plate to tower diaphragm plate SSD1-SA27 A/B-7 using Excalibur 9018M H4R, 4.8mm diameter electrode, preheat of >180 degree C following procedure WPS-B-T-3312-Tc-P5. The QA Inspector randomly observed ZPMC CWI Ye Yong Jun monitoring preheat and weld parameters. See photo below.

This QA observed two ZPMC welder, ID #037944 and ID #066751 welding fillet root pass on this fillet weld connection between tower diaphragm plate to diaphragm flange NSD1-SA335 -7 utilizing the FCAW Process in the 2F (Horizontal) Position with a 1.4mm diameter electrode, filler metal brand K-71TSR, semi automatic with

ZPMC WPS WPS-B-T-4132. The QA Inspector randomly observed ZPMC CWI Ye Yong Jun monitoring weld parameters.

Heat straightening was also observed on 6-open rib stiffener to bottom panel BP303(A)-001 weld joints 001~012 and 5- open rib stiffener to side panel SP644(A)-001 weld joint 001~010 due to welding distortion. Oxy-acetylene gas was used with thermal heat input of less than 650 degree C following procedure HSR1(B)- 1572 and HSR1(B)-1603 respectively.

Bay 7: OBG - Floor Beam Sub Assembly
This QA observed two ZPMC welders Li Wenguo and Hu Ya Cheng welding Critical Weld Repair B-CWR131 on fillet weld of flange to web plate of floor beam FB003-050 weld joint 003 and 005 utilizing SMAW(2F) 4.0mm diameter TL-508 electrode and following procedure WPS-345-SMAW-2G(2F) REPAIR. The repair excavated areas were MT'd by ZPMC/NDE Xu Hai prior to this repair and ZPMC CWI Hu Wei Qing was noted monitoring the preheat of >160 degree C and welding parameters. Another CWR being readied/preheated was B-CWR133 of same connection at floor beam FB003-043-003. See photo below.

The QA Inspector randomly observed ZPMC welder Ni Haibing ID Number 201228 and Zheng Mingye ID #066695, utilizing the Flux Cored Arc Welding (FCAW) Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2231-B-U2-F, to weld the fill pass on PJP corner joint between flange and web plate on floor beam FB027-001-127 and longitudinal shear plate LD006-003-012 respectively. The QA Inspector randomly observed ZPMC CWI Hu We Qing, monitoring weld parameters.

Drilling of 18-24mm diameter bolt holes on 300mm x 300mm hollow steel diagonal brace for floor beam FB006-053-002/004 also noted.

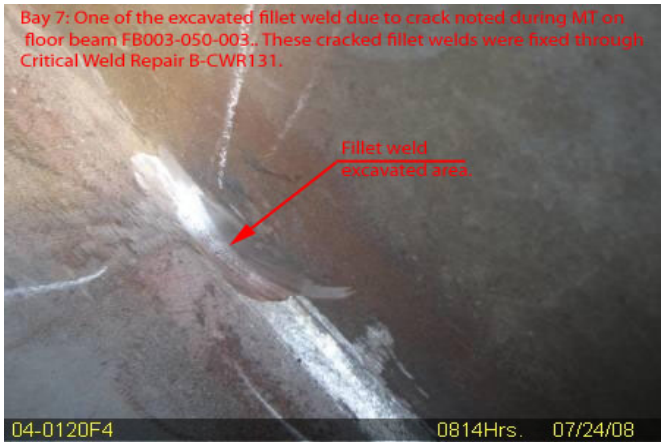
Bay 8: Tower Diaphragm
The QA Inspector randomly observed ZPMC welder Xu Pei Pei ID Number 050323, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2221-B-L2c-S-1, to weld the cover pass on plate splice butt joint of floor beam FB087-002-015. The QA Inspector randomly observed ZPMC CWI Hu Wei Qing monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 578 amps, 31.3 volts with travel speed of 565mm/minute. Weld parameters appeared to comply with contract requirements.

This QA Inspector randomly observed two ZPMC welder Jiang Yong Sheng ID number 045240 and Chen Chao Nian ID #048688 utilizing the FCAW Process in the 3G (Vertical Groove) Position with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic with ZPMC WPS WPS-B-T-2233-B-U3-F, to weld fill pass on groove (bent heavy plate) splice butt joint on Tower Diaphragm Flange Sub-Assembly SSD1-SA277 A/B-10B and SSD1-SA293-17A respectively. The QA Inspector randomly observed ZPMC CWI Lvliqing monitoring weld parameters.

Preheating to >180 degree C prior to welding fillet weld connection between tower diaphragm plate and diaphragm flange at NSD1-SA270-8 also noted.

Heat straightening was observed on tower diaphragm flange WSD1-SA372 A/B weld joints 4A/B, 6A/B, 9 A/B,

and 7A/B due to welding distortion. Natural gas was used with thermal heat input of less than 650 degree C and with the aid of 50-Ton hydraulic Ram following procedure HSR1(T)-2826. Another heat straightening noted on floor beam FB090-002 weld joints 015, 032 and 033 due to welding distortion. Oxy-acetylene gas was used with thermal heat input of less than 650 degree C following procedure HSR1(B)-1632.



Summary of Conversations:

No significant conversation ocurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Joshua Ishibashi, (858) 232-7081, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Cuellar,Robert	QA Reviewer